

RESEARCH ARTICLE

## Academic Guidance for Undergraduate Students in a South African Medical School: Can we guide them all?

Mpho P. Jama\*

### *Abstract*

*Higher education institutions, including medical schools, still grapple with the challenge of poor academic performance of students. Some studies report the positive results of providing academic guidance for common challenges such as poor and/or ineffective time management, study methods, test- and exam-taking techniques and management, and the high academic workload of undergraduate medical students. However, limited detailed insights and understanding of medical students who experience more complex challenges are available.*

*This study was conducted at a medical school in South Africa to determine undergraduate medical students' perceptions of factors affecting their academic performance. A total of 89 semi-structured interviews were held with undergraduate medical students who were identified as having academic problems between 2012 and 2015. According to the results, more blacks, males and first- and second-year students experienced poor academic performance. Prominent findings included the harsh realities and implications of lack of accommodation for black students; how poor academic performance can lead to an array of other social and psychological problems, such as withdrawal of bursaries and negative achievement emotions that some students experience. Compared to the usual objective measures of individual ability, the rich qualitative data of cases presented in this study reveal critical, real insights and understanding of students' challenges from their own perspective.*

### *Keywords*

*academic guidance, academic performance, academic self-perception, student challenges, student experience, student development, student success, undergraduate medical students*

### *Introduction*

In general, studies regarding factors affecting the academic performance of students worldwide have mainly focused on social and academic variables affecting students from disadvantaged school and family backgrounds, often referred to as non-traditional students. In medical education, studies have reported on academic and non-academic factors such as the increased volume of complex material, ineffective time management and study skills, long hours and limited time for self, as well as personal and exam problems that affect the

\* Dr Mpho P. Jama, Division Student Learning and Development, Office of the Dean of Health Sciences, University of the Free State, Bloemfontein, South Africa. Email: JamaMP@ufs.ac.za

academic performance of undergraduate medical students (AlFaris *et al.*, 2014; Artino, La Rochelle & Durning, 2010; Cleland, Arnold & Chesser, 2005; Salem *et al.*, 2013; Sayer, Chaput De Saintonge, Evans & Wood, 2002; Sohail, 2013; West & Sadoski, 2011). One of the key aspects of addressing this challenge is to teach time-management principles, such as avoiding procrastination, previewing information, reviewing material shortly after presentation, prioritising items, managing study periods and making time for other commitments (West & Sadoski, 2011).

With regard to gender, it has been reported that male students perform poorly academically compared to female students (Algan, Cahuc & Shleifer, 2013; Fortin, Oreopoulos & Phipps, 2015). In medicine, a South African study by Moagi-Jama (2009) reported the same findings among undergraduate students. Salem *et al.* (2013) also found a similar trend in a Saudi medical school.

With regard to racial comparisons, Woolf, Potts and McManus (2011) reported that non-black medical students had better throughput rates than their black counterparts. In South Africa, Lehmann, Andrews and Sanders (2000) and Moagi-Jama (2009) also reported high attrition rates among black undergraduate medical students. In the United Kingdom, Esmail and Roberts (2013) found that the pass rates of both British black and minority ethnic graduates and international medical graduates were lower than the pass rates of white UK graduates.

Generally, in higher education, research has shown that the majority of students leave university during the first year of study, with most experiencing emotional challenges that in turn affect their academic performance (Sperry, 2015). In medicine, the results of studies regarding poor academic performance of students during the second year have been reported by Lehmann *et al.* (2000) and Moagi-Jama (2009).

A common assumption is that medical students are predominantly high-functioning and successful, and possess inherently strong motivational beliefs and advanced coping mechanisms that will help them to deal with negative achievement emotions. Regrettably, this is not the case because medical students are not immune to such emotions (Artino *et al.*, 2010).

Although numerous studies have reported on the challenges of medical students, Todres, Tsimtsiou, Sidhu, Stephenson and Jones (2012) noted that little is known about their own perceptions of factors that affect their academic performance. Given the consequences of not detecting the problems of students who go on to either fail, drop out or qualify as problem doctors, medical teachers and advisors must know what to look out for in their medical students (Artino *et al.*, 2010) and develop a deeper understanding of their challenges. Hence the importance of this study, the aim of which was to determine the students' own perceptions of factors affecting their academic performance in an attempt to provide a deeper understanding of some aspects of the web of complex challenges that they face.

### *Context*

Undergraduate medical training in the School of Medicine in the Faculty of Health Sciences of the University of the Free State (UFS) in South Africa is offered in a Programme

for Professional Medicine leading to conferral of the degree *Medicinae Baccalaureus* and *Chirurgiae Baccalaureus* (MBCChB). The programme is structured in three phases and spans a minimum of five years of full-time study. Phase I commences in Year 1 Semester 1; Phase II commences in Year 1 Semester 2 to Year 3 Semester 5, with Phase III commencing in Year 3 Semester 6 up to Year 5 Semester 10. In Phases I and II, the content of the curriculum is arranged in thematic or system-based modules, while Phase III is devoted to clinical medicine. Students commence their clinical training in Year 3 Semester 6 and continue to Year 5 (final) Semester 10. A programme director manages the programme with the assistance of phase chairpersons for each of the three phases. Furthermore, each module has a module leader. The total number of students (1st to 5th year) in a year is approximately 750.

The main focus in the Division of Student Learning and Development (DSLDD) in the Faculty of Health Sciences is to contribute to the academic success of students and this is achieved by designing and implementing programmes, strategies and mechanisms to develop and support students. The development and support is provided by an academic staff member referred to as the student support practitioner.

## *Methods*

### **Process of identifying students with academic problems**

The following process is followed to identify students in the School of Medicine who have academic problems: (i) the phase chairpersons and module leaders send all test and exam results to the programme director; (ii) after receiving the results, the programme director notifies all students with a mark below 55% to consult a student support practitioner; (iii) at times the module leaders also refer students with academic problems directly to the student support practitioner; (iv) the student support practitioner conducts academic guidance interviews with the students referred by the programme director and/or module leaders. (v) Students can also decide by themselves to visit a student support practitioner.

### **Academic guidance interviews**

Individual interviews were held with all the students who were referred and provided with academic guidance by the student support practitioner. An interview guide was used to capture the following data: gender, race, year of study, previous and recent tests and examination results, and students' own perceptions of their academic performance. The main focus during the interviews was on the students' self-perception with regard to reasons for poor academic performance. According to Meltzer, Katzir, Miller, Reddy and Roditi (2004), the term 'academic self-perception' is sometimes used interchangeably with other terms such as 'academic self-concept' and 'academic self-efficacy', to refer to variables such as, among others, academic success or failure. During these interviews some 'cues' were given to encourage students to reflect further (Denison, Currie, Laing & Heys, 2006) on their perceived reasons for poor academic performance. As reported by Saunders, Davis, Williams and Williams (2004), there is a positive relationship between self-perception and academic outcomes. Importantly, students' self-perceptions are better

predictors of academic performance than objective measures that determine their academic ability (Colbeck, Cabrerra & Terenzini, 2001). According to Balmer, Richards and Varpio (2015), these self-perceptions are real. For this study, academic self-perception refers to undergraduate medical students' own perception of factors that contributed to their poor academic performance as reported during the interviews with the student support practitioner.

Although students are referred according to the process explained above, not all of them sought the services of the student support practitioners for academic guidance. According to the records, 168 of the 750 (22.4%) undergraduate medical students were referred between 2012 and 2015. Only 89 of the 168 (52.9%) requested academic guidance. Semi-structured individual academic guidance interviews were held with the students who were identified as having academic problems. In terms of the ethics of the study, the research formed part of an ongoing research project registered with the Ethics Committee of the UFS Faculty of Health Sciences (ETOVS 154\06). The participants gave consent before the interviews, participation was voluntary and they were informed that all personal information would be kept confidential. All the names used in the article are pseudonyms. The main aim of the interviews was to determine students' perceptions of factors that affected their academic performance.

### *Results and Analysis*

Although the main aim of the interviews was to determine students' perceptions of factors that affected their academic performance, it was also important to identify their biographic profile. Most of the results emanating from the interviews confirmed the same biographic variables regarding the academic performance of students. Firstly, 61% of the students with poor academic performance were male. Secondly, more black students (59%) were provided with guidance for poor academic performance. These findings show that the notion 'access with success' for black students still has not been realised in higher education in a developing country such as South Africa and in developed countries. Lastly, most students who reported academic challenges were in the first and second year of study (41% and 47%, respectively).

The qualitative responses from the reports of interviews were read and re-read to get an overall understanding and sense of the data, thus discovering meanings, patterns and connections (Bradley, Curry & Devers, 2007; De Vos, 2005). In addition, the researcher's own thoughts, reflections and intuition were used to discover meanings, patterns and themes, which was possibly due to the researcher's 16 years of experience working as a student support practitioner in the Faculty of Health Sciences. Furthermore, Tinto's theory of academic and social integration (Tinto, 1975, 2014) was used as a guide to develop themes to determine factors affecting the academic performance of these students. The purpose of using a theory was to guide further outcomes and interventions. Using the identified themes assisted in characterising the experiences of the students from the whole data (Bradley *et al.*, 2007). Finally, data were conceptualised and linked to actual students' responses as written in the records of interviews (Niewenhuis, 2007).

The following three main recurring themes that were identified in the analysis of data were also not surprising, although the rich data of the students' own perception of factors that affected their academic performance provided more critical insights and understanding: academic, social and psychological.

### **Academic factors**

Most students felt that one of their challenges was the unmanageable academic workload, with one student stating that she was "struggling to get through the massive content". In addition to the academic workload, some students reported a challenge with managing their time effectively. A notable finding was that students seemed to struggle to answer integrated questions as the School of Medicine has adopted an Integrated Medical Curriculum (IMC). Unlike the traditional methods of assessment, the assessment in the IMC consists of an Integrated Medical Assessment (IMA). Instead of the usual test and exam covering the work dealt with in one particular module, the IMA questions integrate the content of three to four modules in one paper, thus requiring a student to study the content of all these modules when preparing for an assessment. For example, in the first year of study, one of the IMA question papers consists of four modules, namely General Skills, Psychology, Community Health and Concepts of Health and Disease.

### **Social factors**

As expected, students reported social factors such as deaths in the family, financial problems and involvement in extracurricular activities in residences. One black female student reported that her mother had been a domestic worker and they were both living in a one-room dwelling at the back of the employer's house. In a country such as South Africa, an employer in such a case is usually a white person and the employee is a black person. Among the many other problems that this student shared was an incident in which she forgot to close the main gate, and her mother's employer shouted at her and made utterances such as she "doubts if she will be a good doctor if she cannot even follow a simple instruction such as closing a gate". According to this student, this statement had remained in her mind, made her doubt her intellectual ability and consequently, she developed low self-esteem.

Another case is that of a black male student who came from a small rural town and could not be accommodated in the university residences. Eventually he also went to stay in a one-room dwelling at the back of an uncle's house. Unlike the previous student, this particular student stayed with a family member. However, the problem was that the uncle was selling liquor and his 'customers' were noisy, and therefore the student could not study effectively.

### **Psychological factors**

Once again the most common psychological factors that students mentioned were feelings of hopelessness, anxiety, panic attacks, negative feelings, loss of self-esteem, loss of

motivation and sleeplessness. What was striking was a student who reported that she was 'bulimic' for over three months and did not want her mother to know because she was depressed due to her parents' marital problems. This student's behaviour was consistent with the findings reported by Chew–Graham, Rogers and Yassin (2003) that medical students do not seek support for psychological problems.

### *Deeper Insights and Understanding of Students' Challenges*

The following cases provide deeper insights into and understanding of the type of challenges that could not be resolved by intensive academic guidance. The names that are used are pseudonyms.

#### **Mixed ethnicity male Cecil**

Cecil was referred for academic guidance because he had failed four modules in the first semester of his first year. During the interview he stated that he only failed the first test. No academic guidance was provided because he stated that he had no problems. He actually gave an assurance that "everything is under control" and promised to come back and report on his progress regarding his studies. Cecil never came back to do this and the student support practitioner sent him a message to come for academic guidance to which he did not respond.

According to the assessment regulations of the School of Medicine, Cecil could not write exams and failed his first year. He wrote a letter to the Appeals Committee requesting the opportunity to write the exams. In the appeal letter, he stated that he had minor problems at home and thought they would be resolved. His appeal was not successful. Subsequently he came back with his mother to enquire why his appeal was not successful. The programme director explained the regulations to both of them. On further enquiry as to why he did not make use of other support services such as tutoring and mentoring, he stated that he did not make any effort to find out about them. This was not true because all the first-year students are provided with information about these services at the beginning of the year and reminded to use them regularly by the programme director, module leaders and lecturers. Cecil's case might be a symptom of students who cannot regulate their own learning. These are students who lack the "will" and "skill" to take responsibility for their own learning (Sandars, Patel, Steele & McAreavey, 2014).

#### **White male Stefan**

Stefan was also a first-year student who was referred for academic guidance because of his poor academic performance. During the first interview he admitted that he had always struggled with low self-esteem, felt negative and pessimistic about everything in life and struggled to maintain personal relationships. Stefan was referred to a psychologist and encouraged to attend academic guidance sessions as well. According to a report from the psychologist, he never attended all his sessions despite the reminders that were sent to him. With regard to academic guidance, he also never reported back. These two interventions did not help him and he failed his first year of study. Stefan's case is the same as the case

of Cecil mentioned earlier. He had psychological problems and did not use the support services effectively.

### **Black female Neo**

Neo failed her examinations at the end of the first semester of her first year and, according to the rules, was admitted to a remedial programme during the second semester. No academic guidance was provided during the first semester because she was performing well before the exams. During the first academic guidance interview in the second semester, Neo stated she failed because she underestimated the academic workload. She passed all her modules in the remedial programme and was re-admitted the following year. Unfortunately, her bursary was suspended because she failed and her mother took a loan to pay for her studies. As is the case with most loans, the amount of money was not sufficient to pay for all expenses.

Although Neo was repeating her first year, her performance was still not satisfactory. She was referred for academic guidance. During the interview, she reported that she was struggling with her “thought processes” and was afraid that she would fail again. Neo was referred to a psychologist. Fortunately, she passed her first year. During her second year she continued to struggle with her studies. During the interview she reported that she had personal problems and feelings of anxiety. Despite psychological intervention and further academic guidance she failed the second year. Neo’s case provides insights into a student whose problems started as academic but escalated to psychological and social problems.

### **Black male Tsepo**

Tsepo was referred for academic guidance during his first year of study. During the interview he stated that after completing high school, he studied Economics for three years. He did not obtain a qualification because he “felt that Economics was not for him”. The following year he worked at a retail store but found it “depressing” and left to pursue part-time studies in Accounting, which he never completed either. In the following year he registered as a part-time student to improve his Chemistry, Physics and Biology high school marks in order to apply for Medicine. He was successful and was admitted as a medical student. Tsepo stated that he always knew that “he was not cut out for the corporate world because he was very compassionate”.

On enquiring about his own perception of his poor academic performance he mentioned the following: (i) he always had a “depressive personality and suffered from chronic depression his whole life” but was never treated; (ii) he had an abusive childhood because his mother was a “monster” and his father was a “ghost”; (iii) he did not have a close friend or a girlfriend; (iv) he was impatient with “lesser” people who he explained as those who were ignorant and illiterate; and (v) he was at that time writing a short story. Tsepo was referred to a psychologist but did not complete his sessions. He failed his first year of study, could not be admitted into the second semester remedial programme according to the regulations and was advised to reapply after successful counselling. Tsepo was one of the multifaceted cases requiring multiple interventions that could not be provided.

## Black male Lebo

Lebo failed his first year of study as well, was admitted to the remedial programme and repeated his first year the following year. He passed and proceeded to the second year. Once again Lebo failed during the first semester of the second year. He was allocated a personal mentor and was urged to attend regular academic guidance during the second semester, which he did attend. Lebo passed and proceeded to the third year of study. As is the case with most students who fail, his bursary was suspended. At the beginning of the year he struggled to get accommodation and stated that he was “squatting illegally” and slept on the floor in one of his fellow student’s rooms in the university residence. His parents managed to pay for his registration, but he continued to struggle with other living expenses such as food and books. During this period, Lebo continued with academic guidance sessions with the mentor. However, his performance did not improve because of the following academic problems: (i) not being able to answer case study questions that required him to apply theoretical knowledge; (ii) inability to manage multiple-choice questions in one of the tests; and (iii) not following instructions in one of the question papers, stating that he “missed the integrated questions”. Additional support was provided by some lecturers who, for example, discussed question papers and his answers and spent time with him in the museum and dissection room to help him understand Anatomy. At one stage Lebo failed to write one test claiming that he had overslept. Because of his particular circumstances he was allowed to write a special test.

Once again he did not perform well in his formative assessment. Because of the regulations he could not write his exam at the end of the third year. He wrote a letter to the Appeals Committee requesting permission to write exams. In the letter he stated that he had financial problems and was not satisfied with how marks were allocated for some of his tests. After consideration, his appeal was not successful. Eventually he dropped out of medicine.

Lebo is one of the cases with multiple problems and intensive academic interventions that could not help him. Unfortunately some of the medical programmes in South Africa do not have an exit level that can allow a student to be awarded a qualification or certificate for the number of years he or she has spent studying.

## *Discussion*

Despite being provided with information and constantly encouraged to make use of the services of the DSLD, some students did not make use of these services at all or did not use them effectively. One of the reasons for that was some of the students’ perception that they would cope and did not need these services. Students such as Cecil, Stefan and Tsepo are typical examples of students who do not use support services (Jiménez *et al.*, 2015). Another concern is that the attendance of support programmes is voluntary and in most cases these are attended by motivated students who are performing well (Dancer, Morrison & Tarr, 2015).

Other students’ perception of factors that affected their academic performance was the unmanageable volume and underestimation of the high academic workload. Coupled



with the workload were the complicated IMA tests and examinations, which together usually constitute one of the challenges faced by medical students (Sandars *et al.*, 2014). This provides a deeper understanding of the assessment challenges that this group of students experience. In the case of students' perceptions of social factors that affected their academic performance, one of the challenges was accommodation. The comments made by the two students who mentioned accommodation difficulties provided a deeper understanding of this type of challenge. Unfortunately, not all higher education institutions are able to accommodate students in their on-campus residences; hence students resort to unsuitable places for accommodation. In the USA, only 20% of students live on campus (Tinto, 2014). Also, students such as these cannot afford decent accommodation because of financial problems. Therefore, typical academic guidance on time management, study methods and test and exam techniques cannot help such students until the social problems such as accommodation are resolved.

The two important closely related dimensions of students' challenges with regard to their academic performance and support as described above are academic and personal (Sandars *et al.*, 2014). In this study, the psychological dimension was also interrelated to these two issues. For instance, some of the students' perceptions of factors that affected their academic performance in the psychological dimension were, among others, feelings of hopelessness, anxiety and negative emotions. In some instances, as was the case with Tsepo and Stefan, the psychological problems preceded the academic problems, while in other cases, such as Neo's, the academic and social problems preceded the psychological problems.

### ***Conclusion***

As compared to the usual objective measures of individual ability, the rich qualitative data presented in this study revealed critical and real insights and understanding of students' challenges from their own perspective. Every institution has an obligation to provide academic, personal and financial support to the best of its ability once a student is admitted. Sometimes it can be easy to identify students' challenges, but provision of the relevant support can be more challenging. Although institutions aspire to guide all students to succeed, the unavoidable fact is that they have little control over some of their many challenges as revealed in this study. Also, some of the common initiatives are not always grounded in complete understanding of and insight into the social structures (Balmer *et al.*, 2015) and challenges of the students as revealed in this study.

As asserted by Sandars *et al.* (2014), academic problems are just the 'tip of the iceberg' and there is no simple solution or magic bullet (Tinto, 2014) for student support and guidance. Hence, supporting students with the challenges described in this study requires more than academic guidance. For instance, it is common knowledge that one of the main challenges facing students is finances. Funding for tertiary education has become more challenging because globally most countries are facing economic crises. Some of the first-world countries cannot support developing countries such as South Africa, which is now perceived as one of the first-world countries on the African continent. Consequently, most of the funding from first-world countries goes to underdeveloped countries. For students

who ultimately receive a bursary, as was the case with the students referred to, sponsors have requirements that do not consider other challenges that students face and they ultimately terminate or suspend funding. Eventually, this leads to an array of other social and psychological problems.

It is evident that the students described here required holistic support for the complex web of challenges that they faced. This type of support should be provided in a trusting and supportive environment where students can freely talk about their problems rather than only explaining the web of challenges when they are identified as experiencing academic problems.

### *Acknowledgements*

The author would like to thank the students who participated in this study, and Dr Daleen Struwig, Faculty of Health Sciences, University of the Free State, for technical and editorial preparation of the manuscript.

### *Declaration of Interest*

The author reports no conflict of interest. The author alone is responsible for the content and writing of this article.

### *References*

- AlFaris, E.A., Naeem, N., McAleer, S., Qureshi, R., Van der Vleuten, C., Irfan, F. & Jamal, A. (2014). Why a teacher-centered medical school curriculum may result in a poor educational environment? *Journal of Contemporary Medical Education*, 2(2), 85–90. <https://doi.org/10.5455/jcme.20140620013233>
- Algan, Y., Cahuc, P., & Shleifer, A. (2013). Teaching practices and social capital. *American Economic Journal: Applied Economics*, 5(3), 189–210. <https://doi.org/10.1257/app.5.3.189>
- Artino, R., La Rochelle, J.S. & Durning, S.J. (2010). Second-year medical students' motivational beliefs, emotions, and achievement. *Medical Education*, 44(12), 1203–1212. <https://doi.org/10.1111/j.1365-2923.2010.03712.x>
- Balmer, D., Richards, B.F. & Varpio, L. (2015). How students experience and navigate transitions in undergraduate medical education: an application of Bourdieu's theoretical model. *Advances in Health Science Education Theory and Practice*, 20(4), 1073–1085. <https://doi.org/10.1007/s10459-015-9588-y>
- Bradley, E.H., Curry, L.A. & Devers, K.J. (2007). Qualitative data analysis for health services research: developing taxonomy, themes, and theory. *Health Services Research*, 42(4), 1758–1772. <https://doi.org/10.1111/j.1475-6773.2006.00684.x>
- Chew-Graham, C.A., Rogers, A. & Yassin, N. (2003) 'I wouldn't want it on my CV or their records': medical students' experiences of help-seeking for mental health problems. *Medical Education*, 37(10), 873–880. <https://doi.org/10.1046/j.1365-2923.2003.01627.x>
- Cleland, J., Arnold, R. & Chesser, A. (2005). Failing finals is often a surprise for the student but not the teacher: identifying difficulties and supporting students with academic difficulties. *Medical Teacher*, 27(6), 504–508. <https://doi.org/10.1080/01421590500156269>
- Colbeck, C.L., Cabrera, A.F. & Terenzini, P.T. (2001). Learning professional confidence: linking teaching practices, students' self-perceptions, and gender. *Review of Higher Education*, 24(2), 173–191. <https://doi.org/10.1353/rhe.2000.0028>

- Dancer, D., Morrison, K. & Tarr, G. (2015). Measuring the effects of peer learning on students' academic achievement in first-year business statistics. *Studies in Higher Education*, 40(10), 1808–1828. <https://doi.org/10.1080/03075079.2014.916671>
- Denison, A.R., Currie, A.E., Laing, M.R. & Heys, S.D. (2006). Good for them or good for us? The role of academic guidance interviews. *Medical Education*, 40(12), 1188–1191. <https://doi.org/10.1111/j.1365-2929.2006.02629.x>
- De Vos, A.S. (2005). Combined quantitative and qualitative approach. In: De Vos, A.S., Strydom, H., Fouché, C.B. & Delpont, C.S.L. (Eds.). *Research at grass roots: for the social sciences and human service professions*. Pretoria: Van Schaik, 357–365.
- Esmail, A. & Roberts, C. (2013). Academic performance of ethnic minority candidates and discrimination in the MRCGP examinations between 2010 and 2012: analysis of data. *British Medical Journal*, 347, f5662. <https://doi.org/10.1136/bmj.f5662>
- Fortin, N. M., Oreopoulos, P., & Phipps, S. (2015). Leaving boys behind: gender disparities in high academic achievement. *Journal of Human Resources*, 50(3), 549–579. <https://doi.org/10.3368/jhr.50.3.549>
- Jiménez, A.V., Acuña, F.C., Quiero, F.J., López, M. & Zahn, C.I. (2015). Evaluation of a voluntary tutoring program in Chemistry, Physics and Mathematics for first-year undergraduates at Universidad Andres Bello, Chile. *International Journal of Higher Education*, 4(3), 21–32. <https://doi.org/10.5430/ijhe.v4n3p21>
- Lehman, U., Andrews, G. & Sanders, D. (2000). *Change and innovation at South African medical schools: an investigation of student demographics, student support and curriculum innovation*. Health Systems Trust: Durban. Retrieved 23 August 2016 from <http://www.hst.org.za/publications/change-and-innovation-south-african-medical-schools-investigation-student-demographics>
- Meltzer, L., Katzir, T., Miller, L., Reddy, R. & Roditi, B. (2004). Academic self-perceptions, effort, and strategy use in students with learning disabilities: changes over time. *Learning Disability Research and Practice*, 19(2), 99–108. <https://doi.org/10.1111/j.1540-5826.2004.00093.x>
- Moagi-Jama, M.P. (2009). Designing an academic support and development programme to combat attrition among non-traditional medical undergraduates. Doctoral dissertation. Bloemfontein: University of the Free State.
- Nieuwenhuis, J. (2007). Qualitative research designs and data gathering techniques. In: Maree, K. (Ed.). *First steps in research*. Pretoria: Van Schaik, 70–92.
- Salem, R.O., Al-Mously, N. Nabi, I N.M., Al-Zalabani, A.H., Al-Dhawi, A.F. & Al-Hamdan, N. (2013). Academic and socio-demographic factors influencing students' performance in a new Saudi medical school. *Medical Teacher*, 35 (Suppl. 1), S83–S89. <https://doi.org/10.3109/0142159x.2013.765551>
- Sandars, J., Patel, R., Steele, H. & McAreavey, M. (2014). Developmental support in undergraduate medical education: AMEE Guide No. 92. *Medical Teacher*, 36(12), 1015–1026. <https://doi.org/10.3109/0142159X.2014.917166>
- Saunders, J., Davis, L., Williams, T. & Williams, H. (2004). Gender differences in self-perceptions and academic outcomes: a study of African American high school students. *Journal of Youth and Adolescence*, 33(1), 81–90. <https://doi.org/10.1023/A:1027390531768>
- Sayer, M.M., Chaput De Saintonge, M., Evans, D. & Wood, D. (2002). Support for students with academic difficulties. *Medical Education*, 36(7), 643–650. <https://doi.org/10.1046/j.1365-2923.2002.01259.x>
- Sohail, N. (2013). Stress and academic performance among medical students. *Journal of College Physicians and Surgeons*, 23(1), 67–71.

- Sperry, R.A. (2015). Predicting first-year student success in learning communities: the power of pre-college variables. *Learning Communities Research and Practice*, 3(1), Article 2.
- Tinto, V. (1975). Dropout from higher education: a theoretical synthesis of recent research. *Review of Education Research*, 45(1), 89–125. <https://doi.org/10.3102/00346543045001089>
- Tinto, V. (2014). Tinto's South African lectures. *Journal of Student Affairs in Africa*, 2(2):5–28. DOI: 10.14426/jsaa.v2i2.66. <https://doi.org/10.14426/jsaa.v2i2.66>
- Todres, M., Tsimtsiou, Z., Sidhu, K., Stephenson, A. & Jones, R. (2012). Medical students' perceptions of the factors influencing their academic performance: an exploratory interview study with high-achieving and re-sitting medical students. *Medical Teacher*, 34(5), e325–e331. <https://doi.org/10.3109/0142159X.2012.668626>
- West, C. & Sadoski, M. (2011). Do study strategies predict academic performance in medical school? *Medical Education*, 45(7), 696–703. <https://doi.org/10.1111/j.1365-2923.2011.03929.x>
- Woolf, K., Potts, H. W., & McManus, I. C. (2011). Ethnicity and academic performance in UK trained doctors and medical students: systematic review and meta-analysis. *British Medical Journal*, 342, 901. <https://doi.org/10.1136/bmj.d901>